

METHOD AND APPARATUS FOR USING GREETING CARDS DISTRIBUTED WITH ELECTRONIC COMMERCE TRANSACTIONS AS PICK TICKETS

Related Applications

5 **[01]** This application claims priority to and is a continuation-in-part of commonly assigned U.S. patent application Serial No. 09/420,434, Attorney Docket No. F011/7000, filed October 18, 1999, by Doron Friedman, Ajay Singhvi and Brian Huse, and entitled "METHOD AND APPARATUS FOR DISTRIBUTION OF GREETING CARDS WITH ELECTRONIC COMMERCE TRANSACTION", the subject matter of which is incorporated herein by reference for all purposes.

10 **[02]** In addition, this application claims priority to United States Provisional patent applications: Serial No. 60/405,174, Attorney Docket No. F011/7005V1, filed August 22, 2002 by Doron Friedman, Ajay Singhvi and Brian Huse, and entitled "METHOD AND APPARATUS FOR USING GREETING CARDS DISTRIBUTED WITH ELECTRONIC COMMERCE TRANSACTIONS AS PICK TICKETS" the subject matter
15 of which is incorporated herein by reference for all purposes; and

[03] United States Provisional patent application Serial No. 60/405,510, Attorney Docket No. F011/7006V1, filed August 23, 2002 by Doron Friedman, Ajay Singhvi and Brian Huse, and entitled "METHOD AND APPARATUS FOR CREATION, PERSONALIZATION, AND FULFILLMENT OF GREETING CARDS WITH GIFT
20 CARDS", the subject matters of which are incorporated herein by reference for all purposes.

FIELD OF THE INVENTION

25 **[04]** This invention relates to an electronic commerce, in general, and, more specifically, a system for selecting, customizing and coordinating delivery of greeting cards with gifts.

BACKGROUND OF THE INVENTION

[05] Systems which enable the on-line creation of greeting cards and distribution of the greeting cards with gifts are disclosed in published PCT Patent application Serial No. PCT/US00/41272, entitled METHOD AND APPARATUS FOR DISTRIBUTION OF GREETING CARDS WITH ELECTRONIC COMMERCE TRANSACTION.

[06] With such systems, when printed materials, such as personalized greeting cards, personalized promotional advertisements, or catalogs are used, one of the most significant issues is the time and labor required to match these materials with the packing documents (tickets) and any other package items and to ensure that the printed material is included in the correct package. However, much of this matching process is still done manually.

[07] Accordingly, a need exists for a system which enables printed materials, such as personalized greeting cards, personalized promotional advertisements, or catalogs to serve as the pick ticket used to match the printed materials with a gift or package.

[08] Another need exists for a system which enables printed materials, such as personalized greeting cards, personalized promotional advertisements, or catalogs to serve as the data medium from which to print the shipping labels.

SUMMARY OF THE INVENTION

[09] The present invention discloses a method, system and apparatus for enabling on-line selection, customization and transmission of greeting cards over a computer network. In one embodiment of the invention, an eCommerce shopper/network user connects to the inventive system. The network user may select from any of a number of card templates stored in a database. The cards are presented to the network user in a WYSIWYG format. The user is able to customize the card by

adding text, handwritten notes, graphics, photographs and scanned data to the card and view the customized card in a WYSIWYG format. The card may also perform other function as a gift certificate, stock certificate, coupon, etc. After purchase, the customized card is printed by the inventive system and mailed to the address of a recipient, as specified by the network user with a gift or gift card.

[10] In a second implementation of the invention, following purchase of the card, the card is transmitted to the distribution center of an eCommerce vendor from whom a gift has been purchased. There the card is printed, matched and shipped along with the gift to the recipient, as specified by the network user. In this implementation, a network user connects with the website of an eCommerce vendor. After selecting a gift from the eCommerce vendor, the network user is able to optionally connect to the inventive system for selection of a greeting card. The network user is able to select and customize a card, as described previously in the first implementation. After purchasing the card, the data and data structures representing the customized card, as well as data defining the purchaser, recipient(s), and identifying the gift or transaction to the eCommerce vendor product are transmitted over a computer network to the distribution center of the eCommerce vendor. The customized card is printed at the eCommerce vendor's distribution center, preferably on a high resolution graphics printer, matched with the gift and shipped with the gift to the recipient. In this manner, the recipient simultaneously receives a gift and card, both of which have been purchased over the Internet, as if the sender had purchased the gift and card at traditional retail establishments.

[11] In a third implementation of the invention, the card can be used as: 1) a direct source of information for generating a shipping label or an intermediate document used for matching/picking multiple items to be shipped as a single entity with the document, 2) as a reference to a file containing data defining the shipping label or packing list used for matching/picking multiple items to be shipped as a single entity with the document, 3) as the source of information for generating any of a gift card, gift certificate or envelope which is matched/packageged to be shipped as a single entity with

the document, 4) as a reference to a data file containing information for enabling generation of a gift card or gift certificate, and /or 5) as the actual medium on which the recipient/shipping address is printed. In one embodiment, the greeting card serves as the pick ticket used to match the card with the gift and to print the shipping labels. In this embodiment the SKU, lot numbers identifying the gift/product with which the card will be matched, and the shipping address are maintained in memory along with the other information relating to the card. Once the card is printed, the bar code containing the shipping information and the SKU and lot numbers of the gift are printed on the card, typically on the back. Identification of the lot SKU and lot numbers at the warehouse facilitates rapid matching of the card with the gift/package item(s). Scanning of the bar code allows for automated generation of the shipping labels.

[12] In a fourth implementation of the invention, a printed greeting card has more than two panels, with one of the panels including readable data comprising any of an SKU, lot number or packing information identifying a product with which the greeting card will be matched, and a destination shipping address.

[13] According to one aspect of the present invention, a method in a computer system connectable to a computer network, comprising: (a) maintaining in a memory data defining a card, a card destination address and a vendor transaction identifier; (b) printing the card and any of the card destination address, vendor transaction identifier or a references thereto on the card; and (c) generating from the data printed on the card any of a shipping label or an intermediate label useable to help match the printed card with of the elements of the transaction.

[14] According to a second aspect of the present invention, a computer program product for use with a computer system operatively coupled to a computer network comprises a computer usable medium having program code embodied thereon, the program code comprising: (a) program code for maintaining in a memory data defining a card, a card destination address and a vendor transaction identifier; (b) program code for printing the card and any of the card destination address, vendor transaction identifier or a references thereto on the card; and (c) program code for

generating from the data printed on the card any of a shipping label or an intermediate label useable to help match the printed card with of the elements of the transaction.

5 **[15]** According to a third aspect of the present invention, a method in a computer system connectable to a computer network, comprises: (a) providing a greeting card having reference data to a card destination address or a vendor transaction identifier printed thereon; (b) reading the reference data from the card and using the read data to access a memory in which data defining the card destination address and a vendor transaction identifier are maintained; (c) generating a label from the accessed data in memory. In one embodiment the label is a shipping label. In
10 another embodiment, the label is a packing label which identifies another item to be shipped with the card.

[16] According to a fourth aspect of the present invention, a computer system connectable to a computer network comprises (a) a processor; (b) a memory coupled to the processor for storing data defining a card, a card destination address and a vendor
15 transaction identifier; (c) a printer coupled to the processor and memory for printing the card and any of the card destination address, vendor transaction identifier or a references thereto on the card; (d) and program logic configured to generate from the data printed on the card a shipping label or an intermediate label useable to help match the printed card with of the elements of the transaction.

20 **[17]** According to a fifth aspect of the present invention, in a computer system connectable to a computer network, a method comprising: (a) maintaining in a memory data defining a greeting card and any modifications thereto; (b) printing the data defining a greeting card and any modifications on paper stock to make an n panel greeting card, where n is greater than two; (c) printing readable data on one of the n
25 panels of the greeting card, the readable data comprising any of an SKU, lot number identifying a gift/product with which the greeting card will be matched, and a destination shipping address.

[18] According to a sixth aspect of the present invention, in a computer system connectable to a computer network, a method comprising: (a) maintaining in a memory

data identifying one of a plurality of document templates and any personalization modifications thereto; (b) printing the document template in conjunction with any personalization modifications thereto; and (c) printing a data reference on the document. In one embodiment the plurality of document templates comprise any of greeting cards, promotional advertisements, and catalogs. In another embodiment the reference data comprises any of a destination address, SKU and packing list of at least one product to be shipped with the document.

BRIEF DESCRIPTION OF THE DRAWINGS

[19] The above and further advantages of the invention may be better understood by referring to the following description in conjunction with the accompanying drawings in which:

[20] Figure 1 is a block diagram of a computer system suitable for use with present invention;

[21] Figure 2 is a conceptual block diagram of the elements of the inventive system in a network environment;

[22] Figure 3 is a conceptual block diagram of the elements of an alternative implementation of the inventive system in a network environment;

[23] Figures 4-5 illustrate conceptually the construction of the inventive database and the information contained therein;

[24] Figure 6A is a screen capture of the graphic user interface of the inventive server illustrating a selection of cards in accordance with the present invention;

[25] Figure 6B is a screen capture of the graphic user interface of the inventive server illustrating a the panels of a selected card in accordance with the present invention;

[26] Figure 6C is a screen capture of the graphic user interface of the inventive server illustrating a card template in accordance with the present invention;

[27] Figure 6D is a screen capture of the graphic user interface of the inventive server illustrating a customized card in accordance with the present invention;

[28] Figure 6E-K are screen captures of the graphic user interface of the inventive server illustrating various dialog screen through which a network user interacts with the system of the present invention;

[29] Figure 7 is a flow diagram illustrating the processes of customizing/creating a card in accordance with the present invention;

[30] Figure 8 is a conceptual block diagram illustrating the elements of the inventive vendor system in accordance with the present invention;

[31] Figures 9 is a conceptual illustration of the data structures used to represent a card in accordance with the present invention;

[32] Figure 10 illustrates conceptually the construction of the vendor database and the information contained therein;

[33] Figures 11A-C are flow charts illustrating the processes performed by a client system to print a card in accordance with the present invention; and

[34] Figure 12A is a conceptual illustration of a card panel including a bar code and SKU and Lot data useful for matching the card with a gift and for printing shipping labels in accordance with the present invention;

[35] Figure 12B is a conceptual illustration of a card panel including a bar code and a destination address in accordance with the present invention;

[36] Figure 12C is a conceptual illustration of a card panel including a bar code and a pick list of one or more items to be shipped with the card of the present invention; and

[37] Figure 13 is a flow chart illustrating the processes for utilizing information on the printed card to bundle other items, for shipment as a single entity, in accordance with the present invention.

DETAILED DESCRIPTION

[38] Fig. 1 illustrates the system architecture for a computer system 100 such as a Sun SparcStation 5 workstation, commercially available from Sun Microsystems of Palo Alto, CA, or an IBM RS/6000 workstation, or IBM Aptiva PC, both commercially available from International Business Machines Corp. of Armonk, NY, on which the invention may be implemented. The exemplary computer system of Figure 1 is for descriptive purposes only. Although the description may refer to terms commonly used in describing particular computer systems, the description and concepts equally apply to other systems, including systems having architectures dissimilar to Figure 1.

[39] Computer system 100 includes a central processing unit (CPU) 105, which may be implemented with a conventional microprocessor, a random access memory (RAM) 110 for temporary storage of information, and a read only memory (ROM) 115 for permanent storage of information. A memory controller 120 is provided for controlling RAM 110.

[40] A bus 130 interconnects the components of computer system 100. A bus controller 125 is provided for controlling bus 130. An interrupt controller 135 is used for receiving and processing various interrupt signals from the system components.

[41] Mass storage may be provided by diskette 142, CD ROM 147, or hard drive 152. Data and software may be exchanged with computer system 100 via removable media such as diskette 142 and CD ROM 147. Diskette 142 is insertable into diskette drive 141 which is, in turn, connected to bus 30 by a controller 140. Similarly, CD ROM 147 is insertable into CD ROM drive 146 which is, in turn, connected to bus 130 by controller 145. Hard disk 152 is part of a fixed disk drive 151 which is connected to bus 130 by controller 150.

[42] User input to computer system 100 may be provided by a number of devices. For example, a keyboard 156 and mouse 157 are connected to bus 130 by controller 155. An audio transducer 196, which may act as both a microphone and a speaker, is connected to bus 130 by audio controller 197, as illustrated. It will be obvious to those reasonably skilled in the art that other input devices, such as a pen

and/or tabloid may be connected to bus 130 and an appropriate controller and software, as required. DMA controller 160 is provided for performing direct memory access to RAM 110. A visual display is generated by video controller 165 which controls video display 170. Computer system 100 also includes a communications adapter 190 which
5 allows the system to be interconnected to a local area network (LAN) or a wide area network (WAN), schematically illustrated by bus 191 and network 195.

[43] Operation of computer system 100 is generally controlled and coordinated by operating system software, such as Windows 95 or Windows NT®, commercially available from Microsoft Corp., Redmond, WA. The operating system controls
10 allocation of system resources and performs tasks such as processing scheduling, memory management, networking, and I/O services, among things. In particular, an operating system resident in system memory and running on CPU 105 coordinates the operation of the other elements of computer system 100. The present invention may be implemented with any number of commercially available operating systems including
15 OS/2®, UNIX®, Linux and Solaris®, among others.

[44] One or more applications such as a web browser, for example, Netscape Navigator, version 2.0 and thereafter commercially available from Netscape Communications Corporation. and Internet Explorer, version 1.0 and thereafter, commercially available from Microsoft Corporation, Redmond, Washington, may
20 execute under the control of the operating system .

Communication Environment

[45] Fig. 2 illustrates a telecommunications environment in which the invention may be practiced, such environment being for exemplary purposes only and not to be
25 considered limiting. Network 200 of Fig. 2 illustrates a hybrid telecommunication environment including packet-switched data networks, such as the Internet and private Intranets, as well as apparatus bridging between the two. Not every element illustrated

in Fig. 2 or described herein is necessary for the implementation or the operation of the invention.

[46] As illustrated in Fig. 2, a global packet-switched network topology, illustrated as the Internet 205, interconnects various other computers in the network environment to the inventive system 250 of the present invention over a network. As will be understood by those skilled in the art, the Internet is essentially a network of networks which collectively form a global wide area network enabling processes at different network addresses, and typically in geographically disparate locations, to establish communication connections and to transmit data in a variety of formats. In the illustrative embodiment, any number of different transport protocols may be utilized between and among the various processes connectable across the Internet and private Intranets, e.g. Local Area Networks.

[47] As illustrated in Fig. 2, in addition to system 250, a plurality of other computer systems 210, 212, 220 A-B, 230, 240, 250, 260, 265, and 270 are coupled, directly or indirectly, to the Internet 205. Each of these computer systems may be implemented with a computer architecture similar or equivalent to that described with reference to Fig. 1 and capable of executing a computer operating system, such as Windows NT 4.0, available from Microsoft Corporation, Redmond, Washington. Such an operating system is a multi-tasking operating system capable of executing multiple simultaneous threads of execution. Other commercially available operating systems such as Unix, Linux, OS/2, and Solaris may also be utilized. Computer systems 210-270 may utilize any of a number of technologies known in the arts to connect to Internet 205. For example, computer system 220A, which represents a network user, may be connected to the Internet through a dial-up connection to an Internet Service Provider, not shown, such as America On-line or Compuserve. Computer system 220B, representing another network user, may alternatively be coupled to the Internet through a cable modem and broadband cable network infrastructure, also not shown. Vendor distribution computer system 210 and vendor web server system 212, may be connected to the Internet utilizing frame relay technology and a high bandwidth

connection, such as T1, T2 or T3 line. Computer system 230, representing a credit processing server, and computer system 240, representing a card vendor distribution center computer(s), may be similarly connected to Internet 205 using any of the previously-described techniques or any other techniques known in the arts.

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Card Vendor System

[48] Referring to Fig. 2, a conceptual block diagram of the card vendor system 250 in accordance with the present invention is illustrated. The system 250 comprises a web server 260, a database server 270 and database 280, and email server 288
10 operatively coupled, in the illustrative embodiment, via a private network 292, e.g., a packet-switched network, such as a Local Area Network executing the TCP/IP protocol. Network 292 is a private network which may further be used to connect to printer 283 to the distribution computer system 243 and database 241. In the illustrative embodiment network 292 may comprise a 100 megabit Ethernet network. A private network 290
15 couples both web server 260 and email server 288 to firewall server 265. Firewall server 265 is, in turn, connected to Internet 205, via a T1 line, or other connection such as a frame relay connection,

[49] In the illustrative embodiment of the present invention, email server 288 may be implemented as a server executing an application program in accordance with
20 the Post Office Protocol version 3.0 (POP3), such server capable of receiving and sending electronic mail in a manner understood by those skilled in the arts.

[50] In a similar manner, firewall application 265 may be implemented as a server or network appliance executing any of a number of commercially available network security applications which prevent unauthorized access to private networks in
25 a manner understood by those skilled in the arts.

[51] In the illustrative embodiment, web server 260 performs the functions of a traditional web server enabling access to one or more web pages by other processes connected to Internet 205. In addition, webserver 260 contains display control module 266 which utilizes data representing a card, as retrieved from database 280, and data

representing modifications to the selected card, as received from a network user, to render the selected card and its modifications in a WYSIWYG format for viewing by the network user.

5 **[52]** Server 260 may be implemented using a hardware platform similar to that illustrated with reference to Fig. 1. Executing under the control of an operating system are one or more applications necessary for web server 260 to perform its appropriate functions. Specifically, web server 260 presents web pages to the network user and controls the flow of information to/from database server 270. In the illustrative embodiment, the functions performed by web server 260 may be implemented either
10 with object-oriented programming techniques using the appropriate class definitions and objects for values within the database, or, alternatively, using a non-object oriented language such as the C++ programming language.

[53] Web server 260 retains in memory one or more “pages” which collectively may comprise a web site used to visually present the information on the pages. One or
15 more of the pages accessible on web server 260 may contain address information in the form of a Hypertext Markup Language (HTML) tag which may be downloaded over the Internet 205 to a browser process executing on any of the other computer systems connected to the network. Such HTML tag may include the IP address or E-mail address associated with the web site.

20 **[54]** Web server 260 functions to render pages to a network user connected to the web server 260 and to pass data received from a network user to database through the appropriate Application Program Interfaces (APIs). In the illustrative embodiment, the web server 260 may utilize a plurality of Visual Basic, Java script files and/or Java applets to create active web pages. Web server 260 may include a database interface
25 (not shown) which functions as the interface between web server 260 and database server 270. Such database interface may be implemented via ODBC, Remote Procedure Call libraries or other similar technologies which enables the interface to make remotely access the database server 270 and to service calls received from database server 270.

[55] The distribution computer system 240 and its accompanying database 239 may be connected to system 250 via direct network connection or other connections such as dialup modem, DSL or frame relay. Computer system 240 may be coupled to one or more network printers 285 and 286 via a private network such as a LAN.

5 [56] In an alternative embodiment to that illustrated in Fig. 2, email server 288 and web server 260 may be implemented with applications which execute on the same computer system, as illustrated in Fig. 3.

Data Base Architecture

10 [57] In the illustrative embodiment, database server 270 and database 280 may comprise a hardware platform and an operating system capable of executing one of a number of commercially available database products. In the illustrative embodiment, hardware platform may be implemented with a computer system similar to that described with reference to Figure 1. The operating system may be implemented
15 with the Windows NT 4.0 product from Microsoft. The database product may be implemented with Microsoft SQL Server Version 7.0, also commercially available from Microsoft Corporation. The structure of information, including the data fields, records, tables which comprise database 280 are described hereinafter and may also be designed using Microsoft SQL Server Version 7.0.

20 [58] Query engine (not shown) receives information from web server 260 in the form of a query and supplies the query to database 280. The structure and organization of records within database 280 is set forth in greater detail with reference to Fig. 4-5. Database server 270 and database 280 communicate using SQL standard database query language. The SQL standard is published by the American National Standards
25 Institute (ANSI). The database query engine which is integrated into database server filters the queries received from web server 260, such filters useful in focusing or customizing the scope of a database query. The information retrieved from database

280 may be forwarded by database server 270 to web server 260 using any number of know techniques such as remote procedural call libraries, as that previously described.

[59] Figs. 4-5 illustrate conceptually the tables which comprise database 280. Each record, as shown, includes one or more fields and an associated field descriptor, as illustrated. Multiple records of the same type, in turn, collectively form a table within database 280. A field within a record may serve as an index into another record. To further a better understanding of the architecture of database 280, the major tables, as illustrated conceptually by single record and its corresponding fields, are described below in greater detail.

[60] User Table 402 is used to maintain information about a network user who has visited system 250 via a connection to webserver 260. Each record of User Table 402 includes fields for a user identifier, postal address, network address, age, marital status, telephone number, etc. The corresponding field descriptions, e.g. integer, variable character, number, etc., are illustrated in Fig. 4.

[61] Card Table 404 is used to maintain information about a specific card of the master card list. Each record of Card Table 404 includes fields for a card identifier, price, card catalog identifier, text description, width and height of the card, a charity identifier, etc. The corresponding field descriptions are illustrated in Fig. 4A. In the illustrative embodiment, the actual cards may be stored in any graphical format, for example, jpg, gif, tif or bmp. The cards may be stored as part of or separate from database 280, as well as in the database 242 of distribution system 240 and database 218 of distribution system 210, both connectable to system 250. In the illustrative embodiment, the term "card" or "greeting card" is not limited to traditional hard copy cards but also includes images of one or more sides or panels of a card as may be stored in various graphical data formats and resolutions, in addition to those described herein. Further, the term "card" or "greeting card" is not limited to traditional hard copy cards but also includes other related forms of correspondence including announcements, invitations, business cards, notices, and other business and personal forms of communication.

[62] Card Detail Table 406 (CardDet) is used to maintain information about a specific card which has been ordered by a network user. Each record of Card Detail Table 406 includes fields for the ship date, ship month, status, etc. The corresponding field descriptions are illustrated in Fig. 4.

5 **[63]** The Card Detail Detail Table 408 (CardDetDet) is used to maintain information about changes or customizations made to the card by the network user. Each record of the Card Detail Detail Table 408 includes fields defining fields the font, size, color, text, X-position, Y-position, style, file name for an attached file containing graphics, digital photos, scanned data, etc. The corresponding field descriptions are
10 illustrated in Fig. 4.

[64] Charity Table 410 is used to maintain information relating to a specific charity from which proceeds of the card sale may be donated, as explained in greater detail hereinafter. Each record of Charity Table 410 includes fields for a charity identifier, charity description, organizational name, mailing address, etc. The
15 corresponding field descriptions are illustrated in Fig. 5.

[65] The remaining tables of Figs. 4-5 include records having the information fields and field descriptors, as illustrated and which are self-explanatory. For example, the Card Ship info record 412 includes information relevant to the address to which the card is to be shipped. The user gift record 414 includes information about a gift with
20 which the card is associated. The client table 416, client location record 418, client category 420, client key word record 422, and client profile record 422 all maintain information about a client (vendor) from which a gift was purchased and to which the card may be shipped for coordination with the shipment of the gift to the specified recipient. The card gift record 426 and user transmit record 428 include information
25 useful in coordinating the shipment and printing of a card with a specified gift purchased at or shipped from a client's facilities. The occasion record 420 and occasion category record 432 include information fields describing a particular person, date and address for which a card was or may be ordered, and the nature of the occasion, e.g., birthday,

anniversary, graduation, etc., respectively. Such information is useful for administrative and tracking purposes as well as for implementation of a reminder service. The ASPOBJ table 436 and ASPMAS table 434 include information fields used to enable the inventive system to customize the web page appearances in order to make it appear
5 like an eCommerce vendor's web site.. The ship type record 438 includes information describing the manner in which a card and/or the accompanying gift are to be transported to the recipient. Record 442-454 include the information fields and field descriptors, as illustrated in Fig. 4B, useful in administering the inventive system. The records 402-460 of database 280 are related. In particular, a specific entry of one table
10 may be used as an index into a record of another table, as illustrated in the listing below in which each entry has the form:

	[Tablename.Fieldname]	REFERENCES [Tablename.Fieldname]
15	[Category.CatParentId]	REFERENCES [Category.CatId]
	[ClientCat.CCcatParentId]	REFERENCES [ClientCat.CCcatId]
	[Aspobj.AOAspld]	REFERENCES [Aspmas.Aspld]
	[CardKeyword.CKCatId]	REFERENCES [Category.CatId]
	[Charity.CharityCountryId]	REFERENCES [Country.CountryId]
20	[Client.CltCCatId]	REFERENCES [ClientCat.CCcatId]
	[ClientKeyword.CKCCatId]	REFERENCES [ClientCat.CCcatId]
	[ClientMailInfo.CMIShipCountryId]	REFERENCES [Country.CountryId]
	[FreightRates.FCountryId]	REFERENCES [Country.CountryId]
	[FreightRates.FSTId]	REFERENCES [ShipType.STId]
25	[Users.UserCountry]	REFERENCES [Country.CountryId]
	[Users.UserCCType]	REFERENCES [CCType.CCType]
	[Card.CardCatId]	REFERENCES [Category.CatId]
	[Card.CardCharityId]	REFERENCES [Charity.CharityId]
	[ClientLoc.CLocCltId]	REFERENCES [Client.CltId]

	[ClientLoc.CLocCountryId]	REFERENCES [Country.CountryId]
	[CltProfile.CPAOAspld & CPAOld]	REFERENCES [Aspobj.AOAspld.AOld]
	[CltProfile.CPCltId]	REFERENCES [Client.CltId]
	[Invoice.InvUserId]	REFERENCES [Users.UserId]
5	[Invoice.InvCountryId]	REFERENCES [Country.CountryId]
	[Occasion.OccShipCountryId]	REFERENCES [Country.CountryId]
	[Occasion.OccOccCatId]	REFERENCES [OccCategory.OccCatId]
	[Occasion.OccUserId]	REFERENCES [Users.UserId]
	[UserTrans.UTUserID]	REFERENCES [Users.UserId]
10	[CardDet.CDUserId & CDTransId]	REFERENCES [UserTrans.UTUserID & UTTransId]
	[CardDet.CDCardId]	REFERENCES [Card.CardId]
	[CLocStats.CLSCltId & CLSLocId]	REFERENCES [ClientLoc.CLocCltId & CLocId]
	[CLocStats.CLSStatsId]	REFERENCES [Statistic.StatsId]
15	[UserGift.UGCLocCltId & UGCLocId]	REFERENCES [ClientLoc.CLocCltId & CLocId]
	[UserGift.UGUserId & UGTransId]	REFERENCES [UserTrans.UTUserID & UTTransId]
	[CardDetDet.CDDSrno]	REFERENCES [CardDet.CDSrno]
	[CardDetDet.CDDUserId]	REFERENCES [Users.UserId]
20	[CardGift.CGCDSrno]	REFERENCES [CardDet.CDSrno]
	[CardGift.CGUGSrno]	REFERENCES [UserGift.UGSrno]
	[CardShipInfo.CSICDSrno]	REFERENCES [CardDet.CDSrno]
	[CardShipInfo.CSIShipCountryId]	REFERENCES [Country.CountryId]
	[CardShipInfo.CSISTId]	REFERENCES [ShipType.STId]
25	[InvDetl.IDCDSrno]	REFERENCES [CardDet.CDSrno]
	[InvDetl.IDIInvNo]	REFERENCES [Invoice.Invno]

WebServer Interface

[66] Upon connection to webserver 260, either directly or through a hyperlink from the website of a vendor client, a network user is presented with a graphic user interface. The graphic user interface includes a number of web pages which are resident on web server 260 and through which the network user may navigate. The web pages include a number of menus and dialog boxes which allow the network user to interact with the web server 260, particularly with the selection of a card and entering of the necessary information for customization of the card and specifying a recipient address. Sample web pages are illustrated in Fig. 6A-K and include various highlight options and dialog boxes through which a network user may interact with webserver 260.

[67] Figure 6A is a screen capture of the graphic user interface of the inventive web server illustrating a selection of cards rendered in thumbnail size, in accordance with the present invention. In the illustrative embodiment, web pages rendered by webserver 260 appear to be an extension of the web site from which the network user was most recently connected, which as illustrated is 4YourSoul.com. In order to emulate the look and feel of a vendor's web page, the inventive system stores within a database 280, particularly tables 436 and 434, a client identifier and data identifying the appropriate backgrounds, color schemes, font sizes, font styles, font colors, logos, and other graphic or sonic elements etc. which emulate the look and feel of the client web site and give the network user the impression that he/she is still connected to the vendor's web site. To accomplish the above illusion, a client identifier may be passed along with the hyperlink to web server 260. Web server 260 then uses the identifier to retrieve the appropriate parameters from tables 436 and 434 and other, as necessary, for rendering the web pages and graphic user interface in a manner which is similar to those of the vendor from whom the network user recently purchased goods or services. If a network user connect directly to the inventive system, the graphic user interface of the inventive system may be used.

[68] In the illustrative embodiment, card 600 along with the other selectable cards are stored in a number of different formats and sizes. For example, to facilitate selection and customization, cards may be stored in database 280 as files in a thumbnail, intermediate and editable size. Figure 6A illustrates a selection of cards rendered in thumbnail size. Fig. 6B illustrates a card 600 in the intermediate size, as would be viewed by a network user following selection of the card. Fig. 6C illustrates a card 600 in editable size, as would be viewed by a network user during customization of the card. In database 280, the card files comprise graphical data, for example in bit map, .tif, .jpeg or other format, and may be arranged categorically according to particularly themes or occasion, e.g. birthdays, anniversaries, weddings, etc.

[69] A fourth version of each card, from which the card is actually printed, is stored in any of databases 241, 239 and 218 of Figs 2-3. In these databases, the cards may be stored as an encrypted blob, e.g. a binary data file, for security purposes. This format may be obtained by encrypting the graphic data file of the card, for example, a .jpeg file, into a blob using any number of known commercially available encryption tools.

[70] Fig. 6B illustrates card 600 as would be viewed by a network user on a web page 600 following selection of the card. As shown, card 600 is displayed with three panels 600A-C similar to the manner in which a card is viewed in hard copy or tangible form. A fourth side, 600D, not shown, may contain copyright information, vendor tracking information and various logos and trademarks of companies, as well as, possibly, the recipient's information.

[71] Figure 6C illustrates card 600 as would be viewed by a network user in uncustomized form, in accordance with the present invention. Having selected a card, a network user utilizing a pointing device, such as a mouse or pen, designates the coordinates on the card at which text or graphics are to be placed, and, thereafter, enters the customizations to the card, for example by typing in the text to be added to the card at the designated location. In addition, the user selects the font type, font style, font color and font size of the text. In an alternative embodiment of the invention, the

user is able to transmit scanned data representing hand written text or graphics to web server 260 and view the scanned data. Alternatively, the user may transmit a file containing photographic or other graphic data to be integrated into the card. Figure 6D illustrates card 600 as would be viewed by a network user in customized form, in accordance with the present invention.

[72] Control module 266 of web server 260 receives the coordinate information and other information describing the user's customizations, as recorded in customization table 408 and renders the card and the customizations in a What You See is What You Get (WYSIWYG) manner for viewing by the network user, as illustrated in Fig. 6D. In this manner, rather than just entering text into a dialog box for placement in a predetermined location, the user is free to place a customized message in any of text, cursive hand writing, graphics or photographs any where on panels 600A-C and view the card and customizations together in a manner which approximates signing a hard copy card. The WYSIWYG module which enables recording of a card with customizations from a network user is described in further detail herein. Control module 266 includes algorithms which detect the nature of the data transmitted by the network user and formats the data appropriately for presentation to the use. In the case of scanned data, control module 266 utilizes optical character recognition algorithms to separate and eliminate any background information from meaningful characters in the scanned data. In the case of photographic or graphic data files, control module 266 attempts to recognize the data format and render the data within the parameters of the designated panel including any required sizing or clipping of images to for the panel. Figs. 6C-D illustrate a card 600 as displayed on web page, as seen by a network user in both stock, i.e., unmodified, and customized, i.e., modified form, respectively.

[73] Fig. 6E-K illustrate other web pages, in accordance with the inventive system, as would be displayed to a system user who is utilizing the reminder service of the inventive system. The reminder service enables a network user to enter various information about upcoming events, including dates, descriptions and recipients. The

reminder service notifies the network user via e-mail of an up coming event and enables the network user to select cards for the designated recipients using the system described here.

[74] The construction of web pages containing the appropriate dialog boxes and pull down menus is within the scope of those reasonably skilled in the arts and will not be described in further detail hereinafter for the sake of brevity.

Method of Operation

[75] Fig. 7 is a flow diagram illustrating the process steps of the inventive method to enable a network user to select, customize/create and purchase a card from an eCommerce vendor for shipment with a gift or service purchased from the eCommerce network by the network user. Generally, a network user will be connected to system 250 either from a hyperlink from a vendor site or by directly connecting to server 260. When the network user is shopping on-line at an eCommerce vendor's site, and after the user has paid for his/her purchases, the network user is offered the option to order and create a custom card using the system previously described herein. If selected, the customer or network user is redirected, via a hyperlink from the client's website to the website of the inventive system, as illustrated by step 710. When the network user is redirected to web server 260, the vendor will provide web server 260 with a data structure 900, as illustrated in Fig. 9A. In the illustrative embodiment data structure 900 comprises a plurality of data fields including Invoice Number field 902, User Email field 904, Credit Card fields 906-914, Credit Card address fields 916-924, Client Identification Number field 926, and Gift List field 930, as explained in greater detail hereinafter. Invoice Number field 902 represents the vendor's invoice number for a transaction. User Email field 904 represents the email address of the user who has bought items at the vendor's web site. Credit Card Name 906 represents the name on the user's credit card. Credit Card Number field 908 represents the user's credit card

number. Credit Card Exp. Year field 910 represents the user's credit card's expiration year. Credit Card Exp. Month field 912 represents the credit card's expiration month.

[76] Credit Card Type field 914 represents the user's credit card type, e. g. American Express, Visa, Master Card, etc. Credit Card Street1field 916 and Credit Card Street2field 918 represents the user's street address on the credit card. Credit Card City field 920, Credit Card State field 922, and Credit Card Zip field 924 represents the user's city, state and postal zip code, respectively, on the credit card. Client Identification Number field 926 is used to identify the vendor from which the network user is being linked.

[77] Gift List 930 represents a list of items purchased by the network user at the vendor's web site. Each item in Gift List 930, in turn, comprises an Invoice Line Item Number field 930A, SKU field 930B, Gift Description field 930C, Distribution Location Number field 930D, Date of Shipment field 930E, Ship To Person field 930F, Ship To City field 930G, and Ship To State field 930H, as explained in greater detail hereinafter. Invoice Line Item Number field 930A represents the line item number of the subject item on the vendor invoice. SKU field 930B represents the vendor product identification number. Gift Description field 930C represents a short description of the gift purchased. Distribution Location Number field 930D represents the vendor warehouse identifier from where the vendor will ship the subject specific gift, and, consequently, from which vendor system the card will be printed. Date of Shipment field 930E represents the date the vendor will ship the subject gift. Ship To Person field 930F represents the person to whom the subject gift will be shipped. Ship To City field 930G represents the city to which the subject gift will be shipped. Ship To State field 930H represents the state to which the gift will be shipped. Any number of additional items 932 may have a similar format to Gift Item 930.

[78] In the illustrative embodiment of the invention, the data contained within data structure 900, particularly the credit card number and related information, may be encrypted using any number of commercially available software encryption products, such as those available from RSA Data Security Systems, Inc. The data structure

would be encrypted at the vendor site and decrypted, as necessary by the inventive system 250.

[79] Next, the various fields of data structure 900 are stored in database 280, and, where applicable, decrypted, as illustrated by step 712. The information about a user, the email address field, credit card information, etc. is stored in a User record 402 of the User table. The information about the gift purchased at the vendor web site is stored in User Gift Table 414.

[80] Web server 260 then presents to the network user one or more web pages that make up a inventive graphic user interface that appears similar to that of the vendor from which the user was hyperlinked, as illustrated by step 714. The value of Client Identification Number field 924 identifies the vendor from which the network user is linking and is used as an index into tables ASPOBJ table 436 and ASPMAS table 434 to select the default colors, logos and graphics for that vendor, thereby creating the illusion that the network user is still shopping at the vendor's website. The information defining the graphics images required for each page for a specific vendor/client is stored in the Client Profile (CltProfile) table of database 280 and is rendered by web server 260.

[81] In the illustrative embodiment of the invention, a portion of the proceeds of the sale of the card may be donated to charity. As illustrated in Fig. 6E, a web page is displayed allowing the network user to select a charity to which a portion of the sales will be donated, as illustrated by procedural step 716 and decisional step 718. If the network user is a registered user of the system, then the charity of their choice is shown by default. In either case, the user is allowed to change the charity to which the proceeds should be donated.

[82] Next, web server 260 renders one or more web pages containing thumbnail images of cards. These web pages enable the network user to navigate through and select a card from database 280, as illustrated by procedural step 720. The network user can then choose a card by selecting the appropriate category and card, as illustrated by decisional step 722. Once the network user chooses a card, a

web page illustrating three different panels (sides) of the card – the outside, the inner left, and the inner right- is rendered, as illustrated in Fig. 6B, and as illustrated by procedural step 724. The user can click on any panel of the card and the selected panel will be displayed in an editable format along with a number of dialog boxes which
5 allow the network user to selectively customize the card using WYSIWYG technology.

[83] As illustrated in Fig. 6C, the inventive system allows the user to choose a font, color, size, text and style of a customized message, as well as the location on the card panel at which the message will be received, as illustrated by decisional step 726 and procedural step 728. The user can then type text on the card and then move the
10 text anywhere on the screen with a pointing device. Once written the user can edit the text, as well as change the color, font, size and/or the style of the text. The card and customizations are presented in a WYSIWYG format, by module 266, as illustrated by procedural step 730, and as illustrated in Fig. 6D. Module 266 receives the input parameters from the network user and renders the text in font, color, size, and style
15 chosen and at the coordinated specified by the network user.

[84] Module 266 may be implemented as a WYSIWYG application executing under the control of operating system on web server 260. Specifically, module 266 may be implemented as a JAVA application using object-oriented technology. Upon start-up, module 266 is provided with a list of parameters by web server 260. These parameters
20 include the name of an image (card), the location of the image within the memory of web server 260, the dimensions of the image, and a list of instructions defining the position, color, size, font, style and text for each customization to be displayed on the card image. For a new card, which has not been customized by a network user, the list of instructions supplied to module 266 is empty, since there have been no
25 customizations at that point. For a card that has been previously created or which is in the process of being edited, the parameter string supplied to module 266 may contain any of the information identified above. Module 266 creates a list of customization objects, each object storing information about a piece of text, such information including the actual text character string, the font, size, color, style, etc. and position data.

[85] To avoid clutter in displaying the background image of the card as well as the customizations in WYSIWYG manner, module 266 displays one or more labels over the background of the card image. While editing the card, when a network user selects e.g., clicks with a mouse, a specific location on the card, module 266 reviews an internal
5 list of customization objects maintained for that card to determine if the selected coordinates match the coordinates of any previously defined text object. If so, the text is displayed in an edit box with the font, style, size, etc., rendered according to the specification stored in the customization object. If the coordinates do not match, a new empty box is displayed over the background of the card image using the
10 customization characteristics selected by the network user from one or more menus. Once the network user saves a particular portion of text, the customization characteristics are stored in a customization object and the edit area is replaced with a corresponding label. The network user has the ability to select any text with a pointing device and drag the text around the background image of the card, thereby enabling the
15 network user to position the text wherever desired. The background image of the card, along with the text, including the selected characteristics and position, are then rendered in a WYSIWYG manner enabling the network user to view the card as the card will look when printed.

[86] If the network user desires to further modify any text customization to the
20 card, they may simply do so by selecting the text object and then changing any of its characteristics, such as the color, size, style, etc, by simply clicking on the appropriate menus and choosing the desired option.

[87] Once the network user has accepted all the customizations to the card, module 266 creates a string of customizations and forwards the attached string to a
25 redirection URL that redirects the network user to a new page where the customization string data may be parsed and saved into the appropriate tables of database 280.

[88] It will be obvious to others skilled in the art that the functionality of module 266, as described herein, may be implemented using different programming techniques other than object oriented technology and the JAVA programming environment.

[89] In an alternative embodiment, as illustrated by the procedural steps 759-762, and to provide flexibility in personalization of cards, the network user may upload images that can be used to create custom cards. The network user can also upload scanned images of hand written messages and apply them to the card to create personalized graphics, photos or cursive fonts for the card. As shown in Fig. 7A, web server 260 determines whether a graphic image has been uploaded from the network client's system, as indicated by decisional step 759. If so, the image data file, which may represent graphical data in any number of standard formats or scanned data, is received by web server 260 and stored in the appropriate tables of database 280 as illustrated by procedural steps 760 and 761, respectively. Next, the file containing the graphic image data is rendered in WYSIWYG format in addition to or over the background image of the card, as illustrated by procedural step 762. In the illustrative embodiment, any number of commercially available software modules which render graphic data in a variety of different formats may be utilized to perform the functions illustrated by procedural step 762.

[90] The network user is then given the option to accept all of the change to the card, as illustrated by decisional step 732. The data representing the customizations to a card are stored in database 280, as illustrated by procedural step 734. For example, Card Detail Detail (CardDetDet) Table 408 stores the specific pieces of text, the position, the color, font, etc., as well as information for any image data, photographic or scanned, as in step 760, that has been uploaded to web server 260.

[91] Next a web page, as illustrated in Fig. 6F will be rendered which allows the network user to specify information related to the recipient, as illustrated by decisional step 736 and procedural step 738. Card Detail (CardDet) Table 406 stores the macro information for a customized card, like ship date, price, shipping mode, the charity to which part of the proceeds from this card will go, etc. Card Shipping Information (CardShipInfo) Table 412 stores postal address information. If the card is to accompany a gift, then there is no information entered in table 412. Card Detail

(CardDet) Table 406 stores the macro information for a customized card. The storing of such information in database 280 is illustrated as procedural step 739.

[92] Next, the network user will be provided with a summary web page, as illustrated in Fig. 6G, which list the cards, charity, recipient information and price details, as well as with the option to add or delete cards, as illustrated by procedural step 740. At this point, the network user can edit any of the information or add or delete cards.

[93] If finished, the network user will be prompted to visit the reminder service implemented in the inventive system, as illustrated in Fig. 6H, and as illustrated by decisional step 742. If the user chooses to enter the reminder service, web server 260 will render the web pages, as illustrated in Figs. 6J and 6K, which prompt the user to enter the appropriate information, and as illustrated by procedural step 744. As illustrated, the reminder service allows a network user to enter various dates and description of occasions for which a reminder email will be sent prior thereto. In addition, the present invention allows the network user to select, customize/create and purchase cards, for mailing at an appropriate time in the future. For example, using the inventive system, a network user may select, customize and purchase birthday cards for selected friends and family members during a single session and have the card send to the designated recipient on the date designated by the network user. The data entered through the reminder service web page interfaces is stored in database 280. The email server 288 will send a reminder, for example, in the form of an email, to the network user prior to the occasion, as specified by the user. The Occasion Table 430 stores information regarding the specific events that the user wants to be reminded about. The Card Detail (CardDet) Table 406 stores any cards created in advance of an event. The CardDetDet and CardShipInfo Tables, 408 and 412, respectively, also store relevant information, as applicable.

[94] After exiting the reminder service or, if in decision step 742, the network user opted not to enter the reminder service, the network user proceeds to checkout and payment, as illustrated by steps 746, 748 and 750. The network user is be provided with all the information that was received from the vendor regarding the user's

credit card information, as illustrated in Fig. 6I and procedural step 746. If the information is acceptable, the network user selects the process option and the designated credit card will be charged the amount of the purchase. The information about the transaction is stored in database 280 and maintained to keep a historic record of the activity. The Invoice table 444 stores the credit card information which was used to pay for the transaction, the authorization code, etc. The Invoice Detail (InvDetl) Table 446 stores information at the line item level of the invoice in terms of which cards were charged on which invoice. The credit card information is transmitted from system 250 to a credit processing service, such as system 230 of Fig. 2 and as illustrated by procedural step 750. Once the transaction is processed a "Thank You" screen may appear, and the network user is returned to the vendor's web site. If at any time during the above described process a disconnect of the communication link between the network user and web server 260 occurs, an e-mail message is sent to the network user with a link back to web server 260.

[95] Once the credit card transaction has been approved, web server 260 checks the Ship Date field of UserGift Table 414 to determine if the card is to be printed today, i.e. ship date equals current date, as illustrated by procedural step 752 and decisional step 754. If so, an email message will be sent to the vendor's distribution location to print the card, along with a file containing all of the information about the card, as explained hereinafter and as illustrated by procedural step 756. In case the card is to be sent at a later date, an email will be sent later. When the appropriate time comes to print the card, email server 288, will send a message to the appropriate the vendor location through, for example, email, Remote Procedure Call commands or MSMQ (Microsoft Message Queue). Once a day, at about midnight, or at another interval, a process on email server 288 sends emails to all the vendor locations regarding the cards to be printed during the day. There may be multiple emails sent to each vendor location. Each email will contain information for all the cards created by a single user during a single visit. The print process executing at the vendor system will

send a message back to email server 288 indicating the card has been printed, as illustrated by decisional step 758, after which the process as for that card is concluded.

[96] To print a card, web server 260 provides the vendor's distribution center, whether through an email or a batch process, the information from a user session, i.e., from the time the network user first connected to web server 260 until the user disconnects from web server 260. Since a network user may perform multiple transactions in a single session, the session information may include information for multiple transactions. In the illustrative embodiment, the session information may be transferred in a file 1000 having a format in accordance with the XML protocol. It will be obvious to those skilled in the art that other file formats or equivalent data structures may be used in place of file 1000. File 1000 is parsed and used to update database in the vendor system, as explained hereinafter.

[97] File 1000 includes information from the UserGift table 414, i.e. records added to table 414 from a session, including data fields for the Invoice Number, Invoice Line Item Number, Gift Serial Number, Gift ID (SKU) Ship To Person Name, Ship To City, Ship To State, and Ship Date. The Invoice Number field represents the invoice number created by the vendor for the goods purchased by the network user at the vendor web site. The Invoice Line Item Number field represents the invoice line item number created by the Vendor. The Gift Serial Number field represents a unique identification number given by the inventive system to the gift item. The Gift ID field is the vendor identifier for the product, e. g., the SKU. The Ship To Person Name field represents the name of the person to whom the gift will be shipped. The Ship To City field represents the city to which the gift will be shipped. The Ship To State field represents the state to which the gift will be shipped. The Ship Date field represents the date required by the Vendor to print the card for the gift, e.g. the day it will leave the vendor's distribution location.

[98] File 1000 includes information from the CardDet Table, i.e. information which regarding cards created and base card information, including data fields for the Card Serial Number, Card Id, and Card Status. The Card Serial Number field

represents a unique identifier, e.g. a number, assigned to any card created at web server 260. The Card Id field represents card number, e.g. SKU, assigned to the card by the inventive system. The Card Status field represents the current status of the card, e.g. printed, to be printed, etc.

5 **[99]** File 1000 further includes information from the CardGift table 426, i.e. information which associates a card with a gift and a network user, including data fields for the Card Serial Number, Gift Serial Number, User Id and Transaction Id. The Card Serial Number and Gift Serial Number fields have been previously defined. The User Id field represents a unique identifier assigned to a particular network user by the inventive
10 system. The Transaction Id field represents a unique identifier assigned to by the inventive system to uniquely identify every session of a network user on the inventive system.

[100] File 1000 further includes information from the CardDetDet table, e. g. information regarding the text to be superimposed on the card or graphical information
15 which will be superimposed. Such graphical information may include picture, photo or a scanned hand written message. The information from the CardDetDet table includes data fields for the Card Serial Number, Line Item Number, Card Page, X Position, and Y Position. The Card Serial Number field has been previously defined. The Line Item Number field represents a unique counter for every piece of customization in a given
20 card. The Card Page field identifies on which face or panel of the card the text will be printed. The X Position and Y Position fields identify the location of the text on the face of the card.

[101] If part of the customizations to the card include text, then data fields for the Text Color, Text Font, Text Size, Text, and Text Style will be incorporated into file
25 1000. The Text Color field identifies the color in which the text will be rendered. The Text Font field identifies the font in which the text will be rendered. The Text Size field identifies the size of the font in which the text will be rendered. The Text field identifies the subject matter which will be rendered. The Text Style field identifies the style of the font in which the text needs to be rendered.

[102] Otherwise, if part of the customizations to the card include an image, an Image Name field, identifying the name of the attached file which will be superimposed onto the card, will be included with file 1000. A sample file 1000 in XML format is set forth below.

5

```
<?XML VERSION="1.0"?>
```

```
<Print>
```

```
<VERSION>Print Info 1.0</VERSION>
```

```
  <Transactions>
```

10

```
    <Transaction>
```

```
      <UserGifts>
```

```
        <UserGift>
```

15

```
          <UGInvNo>123123</UGInvNo>
```

```
          <UGInvLIno>1</UGInvLIno>
```

```
          <UGSrno>332</UGSrno>
```

```
          <UGGiftId>1</UGGiftId>
```

```
          <UGShipPerson>Sandy</UGShipPerson>
```

```
          <UGShipCity>Mumbai</UGShipCity>
```

```
          <UGShipState>MH</UGShipState>
```

20

```
          <UGShipDate>1/12/1999</UGShipDate>
```

```
        </UserGift>
```

```
        <UserGift>
```

25

```
          <UGInvNo>123123</UGInvNo>
```

```
          <UGInvLIno>2</UGInvLIno>
```

```
          <UGSrno>333</UGSrno>
```

```
          <UGGiftId>2</UGGiftId>
```

```
          <UGShipPerson>Smith</UGShipPerson>
```

```
          <UGShipCity>Bangalore</UGShipCity>
```

```
          <UGShipState>KR</UGShipState>
```

30

```
          <UGShipDate>4/11/1999</UGShipDate>
```

```
        </UserGift>
```

```
      </UserGifts>
```

```
      <CardDets>
```

```
        <CardDet>
```

35

```
          <CDSrno>1251</CDSrno>
```

```
          <CDCardId>4</CDCardId>
```

```
          <CDStatus>S</CDStatus>
```

```
        </CardDet>
```

```
      </CardDets>
```

40

```
      <CardGifts>
```

```
        <CardGift>
```

```
          <CGCDSrno>1251</CGCDSrno>
```

```
          <CGUGSrno>333</CGUGSrno>
```

```
          <CGUserId>930</CGUserId>
```

45

```
          <CGTransId>1</CGTransId>
```

```
        </CardGift>
```

```
        <CardGift>
```

```
          <CGCDSrno>1251</CGCDSrno>
```

```

5      <CGUGSrno>332</CGUGSrno>
      <CGUserId>930</CGUserId>
      <CGTransId>1</CGTransId>
      </CardGift>
5    </CardGifts>
    <CardDetDets>
      <CardDetDet>
        <CDDSrno>1251</CDDSrno>
        <CDDSrno1>1</CDDSrno1>
10      <CDDColor>-16777216</CDDColor>
        <CDDPage>FI</CDDPage>
        <CDDFont>Dialog</CDDFont>
        <CDDSize>6</CDDSize>
        <CDDText>HI PAL!</CDDText>
15      <CDDXPos>210</CDDXPos>
        <CDDYPos>212</CDDYPos>
        <CDDStyle>0</CDDStyle>
      </CardDetDet>
      <CardDetDet>
20      <CDDSrno>1251</CDDSrno>
        <CDDSrno1>2</CDDSrno1>
        <CDDColor>-16777216</CDDColor>
        <CDDPage>F</CDDPage>
        <CDDFont>Dialog</CDDFont>
25      <CDDSize>6</CDDSize>
        <CDDText>HAPPY BIRTHDAY</CDDText>
        <CDDXPos>235</CDDXPos>
        <CDDYPos>200</CDDYPos>
        <CDDStyle>0</CDDStyle>
30      </CardDetDet>
      </CardDetDets>
    </Transaction>
  </Transactions>
</Print>
35

```

Client System

[103] Referring to Fig. 8, a conceptual block diagram of a vendor (client) system 210 is illustrated. System 210 will typically be located at an eCommerce vendor's distribution center and may be connected through a public computer network to system 250. In addition, system 210 is coupled through a private network 208, such as a LAN, to printer 215 and printer 213. Vendor system 210 may be implemented with a computer hardware platform similar to that described with reference to Fig. 1 executing

an operating system, such as Windows NT 4.0. As illustrated in Fig. 8, an email processing service application 212, print service application 214, database server application 219 and control center application 216 execute on computer system 210 under the control of the operating system. A database 218 coupled to system 210 contains tables 804-866, as described with reference to Fig. 10, as well as the collection of base cards as previously described. Alternatively, the cards, as stored in one of the previously-described formats. Alternatively, the cards may be encrypted and stored as binary blobs which are decrypted upon printing thereof.

[104] Email processing service 212 is responsible for periodically polling email server 288 of system 250 to see if any messages have been posted. If there are messages, email processing service 212 will download and process the messages. Processing of the messages includes parsing the XML file 1000 contained within the email message and using the data values defined therein to update database 218 of vendor system 210. The XML file 1000, in the illustrative embodiment, may contain SQL database queries which are used to update database 218 of client system 210.

[105] Figs. 10 illustrates conceptually the tables which comprise database 218. Each record, as shown, includes one or more fields and an associated field descriptor, as illustrated. Multiple records of the same type, in turn, collectively form a table within database 218. A field within a record may serve as an index into another record. To further a better understanding of the architecture of database 218, the major tables, as illustrated conceptually by single record and its corresponding fields, are described below in greater detail.

[106] Card Table 804 is used to maintain information about a specific card of the master card list. Each record of Card Table 804 includes fields for a card identifier, price, card catalog identifier, text description, width and height of the card, a charity identifier, etc. The corresponding field descriptions, e.g. integer, variable character, number, etc., are illustrated in Fig. 10. In the illustrative embodiment, the actual cards may be stored in any graphical format, for example, jpg, gif, tif or bmp. The cards may

be stored as part of or separate from database 218, as well as locally in the memories of vendor systems 210 and distribution system 240 connectable to system 250.

[107] Card Detail Table 806 (CardDet) is used to maintain information about a specific card which has been ordered by a network user. Each record of Card Detail
5 Table 406 includes fields for the ship date, ship month, status, etc. The corresponding field descriptions are illustrated in Fig. 10.

[108] The Card Detail Detail Table 808 (CardDetDet) is used to maintain information about changes or customizations made to the card by the network user. Each record of the Card Detail Detail Table 808 includes fields defining fields the font,
10 size, color, text, X-position, Y-position, style, file name for an attached file containing graphics, digital photos, scanned data, etc. The corresponding field descriptions are illustrated in Fig. 10.

[109] Charity Table 810 is used to maintain information relating to a specific charity from which proceeds of the card sale may be donated, as explained in greater
15 detail hereinafter. Each record of Charity Table 810 includes fields for a charity identifier, and organizational name. The corresponding field descriptions are illustrated in Fig. 10.

[110] The remaining tables of Fig. 10 include records having the information fields and field descriptors, as illustrated. For example, the Card Ship Info Table 412
20 includes information relevant to the address to which the card is to be shipped. The UserGift Table 814 includes information about a gift with which the card is associated. The CardGift Table 826 includes information useful in coordinating the printing of a card with shipment of a specified gift from a vendor's facilities. Tables 814-866 include the information fields and field descriptors, as illustrated in Fig. 10, some of which are
25 subsets of similar tables from database 280. The records 804-866 of database 218 are related, as illustrated in Fig 10 and which are self-explanatory. In particular, a specific entry of one table may be used as an index into a record of another table, as illustrated in the listing below in which each entry has the form:

[Tablename.Fieldname]

REFERENCES [Tablename.Fieldname]

[Card.CardCharityId]

REFERENCES [Charity.CharityId]

[CLocStats.CLSCltId & CLSLocId]

REFERENCES [ClientLoc.CLocCltId & CLocId]

5 [CLocStats.CLSStatsId]

REFERENCES [Statistic.StatsId]

[CardDet.CDCardId]

REFERENCES [Card.CardId]

[CardDetDet.CDDSrno]

REFERENCES [CardDet.CDSrno]

[CardGift.CGCDSrno]

REFERENCES [CardDet.CDSrno]

[CardGift.CGUGSrno]

REFERENCES [UserGift.UGSrno]

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[111] When a print message arrives, service 212 will update database 218 and set an event to notify the print service 214 that a print request has been received. Email processing service 212 is also responsible for sending any messages that are generated the other applications executing on vendor system 210. When not busy, email service 212 waits on a send event. Such event is set either by the vendor control center 216 or print service 214. If either application 214 or 216 has created an email for system 250, the application will set an event which service212. Email processing service 212 will establish a connection with system 250 and transmit the email to system 250.

20

[112] Print service 214 remains idle until an event notification of a pending print instruction. When email processing service 212 receives the print command it sets the notification event for print service 214. Print service 214 then queries database 218, and, using the data values previously stored in database 218 by email processing service 212, prints the card on printer 215 or another available printer. Print service 214 may also monitor printer problems such as paper jams, low toner, no paper, etc. Print service 214 will notify system 250 of any problem encountered during the printing process by creating an email, placing it in a queue and generating a notification event for email processing service 212 that an email needs to be sent to system 250.

25

[113] A high resolution color printer 215 capable of printing photographic quality images may be coupled to vendor system 210 to facilitate printing of the cards. Such a printer suitable for use with the present invention is the HP 8500DN, commercially available from Hewlett Packard Corporation, Palo Alto, CA. In the illustrative embodiment, cards are printed in a full bleed format, i.e. up to the edge of the paper and on high quality stock paper, giving the card the appearance of a traditional greeting card. Alternatively, the cards may have a border around the edge of the stock on which the card is printed. Thereafter, at the client/vendor's facilities, typically a distribution center, the card may be inventoried and matched with the designated gift for shipment.

[114] At the vendor's facilities, the card is printed with an invoice number, invoice line item number and a card number thereon. In the illustrative embodiment, the invoice number, the invoice line item number, and card number may be printed on the back panel of the tangible card using, for example, an optical bar code or other format to identify both the card and the invoice number, client transaction code or other information useful by the vendor to match the card with a particular gift of transaction.

[115] Vendor control center service 216 allows a user at the vendor's distribution location to request a reprint of a card, in case it has been damaged or for any reason. Service 216 also provides the users with the ability to quickly send an email to and interact with system 250 directly. Accordingly, service 216 allows the vendor location to request the re-transmission of data and files relating to certain cards in the event of data loss or corruption.

[116] Although the above-described illustrative embodiment has been implemented using email addresses as a communication mechanism between system 250 and vendor system 210, it will be obvious to those reasonably skilled in the arts that other messaging techniques may be used, such as any number of commercially-available Remote Procedure Call library utilities, as well as the Microsoft Message Queue, (MSMQ) commercially available from Microsoft Corporation, Redmond, Washington.

[117] Figures 11A-C are flowcharts illustrating the processes performed by vendor system processes 212, 214 and 216 in accordance with the present invention. Specifically, referring to Figure 11A, if a notification event for email processing service 212 has been received or generated by a timer, as illustrated by decisional step 1004,
5 service 212 will send the email message to system 250, as illustrated by procedural step 1006. If a message has been received, the message will be downloaded to system 210, as illustrated by procedural step 1008. Email processing service 212 will parse the XML file attached with the email and extract the values for the data fields contained therein, as illustrated by procedural step 1010. Service 212 will store the values of the
10 extracted data in database 218 of system 210, as illustrated by procedural step 1012. Thereafter, if an email message instructing the system 210 to print a card is received, service 212 will generate a notification event for print service 214, as illustrated by decisional step 1014 and procedural step 1016.

[118] Referring to Figure 11B, print service 214, upon receiving the notification
15 event, will retrieve data from the appropriate records within database 218, as illustrated by decisional step 1020 and procedural step 1022, including retrieval of the base card image from database 218. Utilizing the data representing the customizations to the card, print service 214 will create the card image with the customizations, as illustrated by procedural step 1024, and print the card on a printer, as illustrated by procedural
20 step 1026. If an error occurs during the printing process, as illustrated by decisional step 1028, print service 214 will generate an error message, as illustrated by procedural step 1030, and send an event notification to email processing service 212, as illustrated by procedural step 1032. Otherwise, the card will be printed, along with, optionally, a shipping receipt/invoice, to assist in matching the card with a corresponding gift or
25 transaction.

[119] Referring to Figure 11C, the process of retransmitting data associated with one or more cards or communicating directly with system 250 is illustrated. If, through interaction of a user, typically a system administrator entering the appropriate user command, a request to send a message is received, vendor control center service 216

will create a message and send an event notification to email processing service 212, as illustrated by steps 1034-1038. Such messages are defined by the system administrator and may be requests for supplies of notifications of specific system need or conditions. If, through interaction of a user, a request to reprint a card is received, vendor control center service 216 will query database 218, create the card, and reprint the card, as illustrated by steps 1040-1046 and in a manner as previously described with reference to Fig. 11B. If, through interaction of a user, a request to send a particular card is received, versus waiting until the system automatically received the card data from system 250, vendor control center service 216 will create a message and send an event notification to email processing service 212, as illustrated by steps 1048-1052. If, through interaction of a user, a request to down load data immediately is received, vendor control center service 216 will send an event notification to email processing service 212, as illustrated by steps 1054 and 1052.

[120] The above example describes a scenario in which a network user has hyperlinked to system 250 from the web site of an eCommerce vendor. Alternatively, if a network user connects directly to web server 260, to select and customize a card, the process occurs substantially as described above except that any necessary information contained in data 900 will be entered directly by the network user through the user interface web pages supplied by web server 260. In such a scenario, the billing, printing, inventorying and shipping of the card may be done directly by the inventive system 250 or using a system 240 which may be constructed and function similar to any other vendor system 210. Additionally, multiple systems similar to 240 may be located in disparate geographical regions and operatively coupled to system 250 over either public or private computer networks to enable accelerated delivery of the card without the cost of international postage.

GREETING CARD AS A PICK TICKET AND INFORMATION SOURCE

[121] According to another aspect of the invention, a document, such as a personalized greeting card, personalized catalog or personalized direct marketing

material can be used as: 1) a direct source of information for generating a shipping label or an intermediate document used for matching/picking multiple items to be shipped as a single entity with the document, 2) as a reference to a file containing data defining the shipping label or packing list used for matching/picking multiple items to be shipped as a single entity with the document, 3) as the source of information for generating any of a gift card, gift certificate or envelope which is matched/package to be shipped as a single entity with the document, 4) as a reference to a data file containing information for enabling generation of a gift card or gift certificate, and /or 5) as the actual medium on which the recipient/shipping address is printed.

[122] In the vast majority of cases, particularly in the gift product market, the number of items to be combined with printed material is one. This provides a unique opportunity to utilize the printed material, such a personalized greeting card, as a the packing document (ticket). However, this process is not limited to only one item, as multiple items can be listed, but only one shipping address is typically utilized.

[123] Referring to Figures 12A-C, printed material 1200, which in the illustrative embodiment may be a multiple panel personalized greeting card, includes at least one panel in which data useful in matching the printed material with one or more items is printed. In the illustrative embodiment, the printed material 1200 comprises a four panel personalized greeting card having a front panel 1200A, a rear panel 1200B, and at least two interior panels 1200C-D (not fully visible). Alternatively, other personalized printed materials such as personalized catalogs, personalized marketing materials, personalized gift certificates, personalized gift cards, or other personalized documents may be utilized in place of the personalized greeting card 1200.

[124] As shown in Fig. 12A, in a predetermined area 1202 of panel 1200B, a bar code and/or a human readable graphics, or both, are included and may serve as a source of item matching and/or shipping information. In Figure 12A, barcode 1204 may include a reference to a database or computer memory address at which the data relating to a vendor transaction, including shipping address of the recipient or data about the location and nature of any products to be shipped with the card, is

maintained. The remainder of the product identification information in area 1202 may be specific to a warehouse-by-warehouse application, and serves to inform warehouse personnel as to which product to pick and where to route the product/card combination once the item(s) have been matched with the printed material 1200. As with the bar code, the SKU and other data may serve as a reference to a memory address in which the data about the location and nature of any products to be shipped with the card is stored. The information in area 1202 is used first by the warehouse personnel to locate the proper materials that the consumer has ordered. Thereafter, once the warehouse operator has selected the specified product(s), the product(s) must be packaged along with the printed material.

[125] It is contemplated that the document can be inside or outside the packing container. If the printed material 1200 must be enclosed in a box with the product, then the additional step of barcode duplication with a bar code duplicator may occur prior to packing the printed material. The barcode duplicator, may be either tabletop mounted, or worn on the body and consists of a barcode reader, directly connected to a barcode printer. When triggered, the barcode duplicator reads whatever barcode, retrieves any data to route the package through a facility, either to be shipped alone or to be combined with other items, and sends the data to a printer for printing an intermediate label. When the barcode is duplicated, it is then applied to the outside of the box in which the printed material 1200 and one or more products have been enclosed. In cases where the printed material 1200 is being placed in a "post pack" envelope, e.g. UPS or Fedex shipping envelopes, that are clear on the front and adhesived on the back, the barcode on the printed material continues to act as the shipping reference, and thus may not need to be duplicated.

[126] Once any product and printed material 1200 have been packaged and sealed, with the information available on the outside of the parcel, either in duplicated barcode form or via original printed materials, the parcel can be routed to the shipping area. Many current warehouse systems have automated "print and apply" shipping systems. These shipping systems can be used to read the barcode information on the

parcel to generate the appropriate shipping label, and provide the required reverse tracking of the parcel to ensure that it was shipped.

[127] In the illustrative embodiment, the information in area 1202 of Fig. 12A may be stored in the previously described records of a database or other computer memory. For example, the Card Ship info record 412 includes information relevant to the address to which the card or other printed material 1200 is to be shipped. A memory access code in the form of a bar code can then be generated to access the data from record 412 during the shipping label generation process. The user gift record 414 includes information about a gift(s) or other product(s) with which the card is associated. The card gift record 426 and user transmit record 428 include information useful in coordinating the shipment and printing of the card 1200 with a specified gift purchased at or shipped from a client's facilities. The data from these fields can be used to identify the SKU and Lot identifying the gift /product. Some or all of this information may be provided on the card 1200 in any of the formats described above, in addition to any other known formats, as well as in human readable alphanumeric characters directly on one of the card panels itself, so that the card facilitates the efficient matching and shipping of the card with the intended package.

[128] In addition, the nature of the products with which the card is matched is not limited. For example, in the above-described process, the personalized greeting card may be used as the source of information for generating a gift card or gift certificate which is matched and shipped as one package with the greeting card. Such gift cards may include plastic cards with a magnetic stripe affixed thereto for storing data, as well as other gift card designs. Gift certificates may be printed directly on the card itself or on a separate medium. In such instances, barcode 1204 of Figures 12A-C, may include a reference to a memory in which the data relating to the generation of the gift card/ gift certificate is maintained. Accessing such file may trigger automatic generation of the gift card/ gift certificate. As with the bar code, the SKU and other data may serve as a reference to a memory in which the data about the location and nature of any gift card/ gift certificate to be shipped with the card is stored.

[129] Figure 12B illustrates a multipanel card 1200 similar to that illustrated in Figure 12A, except that the area 1202 has printed thereon a recipient address, as illustrated. In this embodiment, the card 1200 may be placed in an envelope having a transparent portion in the front thereof , so that when the card is aligned in the envelope, the recipient address is visible from the front of the envelope and maybe affixed to the outside of a parcel. With this embodiment the barcode 1204 may function as a reference to a memory in which the data relating to the generation of the gift card/ gift certificate is maintained, or as a reference to a memory address in which the data about the location and nature of any products to be shipped with the card is stored .

[130] Figure 12C illustrates a multipanel card 1200 similar to that illustrated in Figures 12A-B, except that the area 1202 has printed thereon SKU and other data that may serve as a reference to the location and nature of any products to be shipped with the card. The information in area 1202 is used first by the warehouse personnel to locate the proper materials that the consumer has ordered. In Figure 12C, barcode 1204 may include a reference to a database or computer memory address in which the data useful for generation of either an addressed envelope or a shipping label is maintained.

[131] The process of using printed material 1200 as an information source is explained hereafter with reference to Figures 12-13. First, a consumer selects, customizes and purchases a greeting card, by itself or in conjunction with another item, utilizing the systems and processes described herein. The vendor fulfilling the transaction prints the greeting card 1200, including the panel 1200B, utilizing one of the formats illustrated in Figures 12A-C, as illustrated by process block 1300. Next, the reference information printed panel 1200B is a utilized to efficiently manage the card 1200 with any other items and to facilitate shipment thereof as a single entity. In the scenario illustrated in Figure 12C, the greeting card 1200 is part of a multiple item vendor transaction and is intended to be shipped with a item 1210, which may be a personalized catalog or other personalized marketing material, a gift card or gift certificate 1212 and a gift items 1214, as illustrated. Reference data, in the form of

barcode 1204 printed panel 1200B of Figure 12C, is scanned using the appropriate scanning apparatus and used to generate a recipient address. An examination of panel 1200B by fulfillment personnel or automated scanning techniques determine whether scalable information is printed on panel 1200B, as required in decisional block 1302, however, the specific values of the scanned data, as defined by the fulfillment process, will determine whether an intermediate document is required in decisional block 1303. The data represented by barcode 1204 may include the recipient address itself, which may then be printed on either an envelope 1216 or a shipping label 1220 affixed thereto, as illustrated by arrow "A" in Figure 12C and process blocks 1304 and 1306 of Figure 13. Alternatively, the data represented by barcode 1204 may include the address of a data file in which the recipient address resides. The recipient address on envelope 1216 and/or shipping label 1220 may also be printed from the data file, also represented by process blocks 1304 and 1306. If other items are to be shipped with card 1200, the SKU data and item codes printed in area 1202 of panel 1200B are utilized by a warehouse operator or fulfillment center personnel to select specified product(s), here items 1210, 1212 and 1214, as illustrated by arrow "B" in Figure 12C, and combine the items into container 1218, as illustrated by arrow "C" and process block 1307 of Figure 13. The card 1200 is placed in envelope 1216, if by itself, or if in combination with a package and the envelope attached to container 1218, both as illustrated by arrow "D" and process block 1312 of Figure 13. In this matter, the freight carrier or shipper may then send the entire parcel, including container 1218 with the envelope 1216 affixed thereto, as a single unit, allowing a personalized greeting card to accompany the other items of the transaction.

[132] As an alternative to the process described above, and utilizing the card 1200 illustrated in Figure 12B, the recipient address may be printed directly on the panel 1200B while a packing list or pick ticket 1222 may be printed as an intermediate document from either the data represented by barcode 1204 or from a data file accessed using an address embodied in barcode 1204, and as also illustrated by arrow "B" and blocks 1302-1306, described previously. The printed pick ticket 1222 may

include any data format or data types, including those illustrated in panel 1200B of Figures 12A-C. The printed pick ticket 1222 is then utilized by a warehouse operator or fulfillment center personnel to select specified product(s), as illustrated by arrow "C" in Figure 12C, and block 1307 of Figure 13, as described previously. If the recipient address is already printed on panel 1200B, as determined by decisional block 1308, the card 1200 would be placed into an envelope 1216 containing a clear window so that the recipient address is visible from the envelope once it is affixed to the outside of container 1218, as illustrated by arrow "D" in Figure 12C, and block 1312, as described previously. However, if the recipient address is not printed directly on panel 1200B, as determined by decisional block 1308, either the intermediate document, such as pick ticket 1222 or card 1200 is scanned and a shipping label 1220 generated from the data either contained there and are reference thereby, as illustrated by process block 1310. Thereafter, the shipping label may be affixed to package 1218 in accordance with process block 1312, as previously described.

[133] Note also that the data contained in panel 1200B may be utilized to drive the generation of the personalized gift card 1212 or personalized catalog 1210, utilizing the customization process described herein.

[134] The reader can appreciate that, in light of the disclosure contained herein describing the systems and processes and the nature of data which is printable on a panel of a personalized document such as any of a personalized greeting card, catalog or other direct marketing material, that multiple variations of the above-described process may be utilized in which the personalized printed material serves as the link among the matching, bundling and shipment of multiple items to a transaction as a single entity.

[135] The above-described process can be used with greeting card that are ordered and/or customized through any of number of communication interfaces including fax, electronic mail, traditional mail, internet servers, retail kiosk, catalog call center, etc.

[136] The above-described invention may be implemented in either all software, all hardware, or a combination of hardware and software, including program code stored in firmware format to support dedicated hardware. A software implementation of the above described embodiment(s) may comprise a series of computer instructions either
5 fixed on a tangible medium, such as a computer readable media, e.g. diskette 142, CD-ROM 147, ROM 115, or fixed disk 152 of Figure 1, or transmittable to a computer system in a carrier wave, via a modem or other interface device, such as communications adapter 190 connected to the network 195 over a medium 191. Medium 191 can be either a tangible medium, including but not limited to optical or
10 analog communications lines, or may be implemented with wireless techniques, including but not limited to microwave, infrared or other transmission techniques. The series of computer instructions whether contained in a tangible medium or a carrier wave embodies all or part of the functionality previously described herein with respect to the invention. Those skilled in the art will appreciate that such computer instructions
15 can be written in a number of programming languages for use with many computer architectures or operating systems and may exist in machine executable format. Further, such instructions may be stored using any memory technology, present or future, including, but not limited to, semiconductor, magnetic, optical or other memory devices, or transmitted using any communications technology, present or future,
20 including but not limited to optical, infrared, microwave, or other transmission technologies. It is contemplated that such a computer program product may be distributed as a removable media with accompanying printed or electronic documentation, e.g., shrink wrapped software, preloaded with a computer system, e.g., on system ROM or fixed disk, or distributed from a server or electronic bulletin board
25 over a network, e.g., the Internet or World Wide Web.

[137] Although various exemplary embodiments of the invention have been disclosed, it will be apparent to those skilled in the art that various changes and modifications can be made which will achieve some of the advantages of the invention without departing from the spirit and scope of the invention. It will be obvious to those

reasonably skilled in the art that other components performing the same functions may be suitably substituted. Further, the methods of the invention may be achieved in either all software implementations, using the appropriate processor instructions, or in hybrid implementations which utilize a combination of hardware logic and software logic to

5 achieve the same results.

[138] What is claimed is: